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Structural Soil to the Rescue

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- Laura Drotleff & Don Eberly

The Broadstone at 2115 Piedmont Apartments Development is a vibrant new residential complex in the Piedmont Avenue area of Atlanta, where "green" living is highly valued. Chic and modern, sleek and stylish, it stands to become an exciting part of the area's ongoing rebirth, which includes the multiyear preservation of historic Piedmont Park—the most visited green space in Atlanta.

When the complex was in its early planning stages, developer Alliance Residential was adamant about using sustainable methods to add green space to the area while complying with safety codes, including installing a required fire lane between apartment buildings.



The Broadstone's developer valued safety and sustainability.

Players & Plan

The developer worked together with landscape contractor Sitescapes and ERTH Products, a company specializing in the manufacturing and engineering of specialty soils utilizing compost and lightweight aggregates, to design a solution.

As an alternative to using typical materials (e.g., grid pavers) to build the required fire lane, ERTH Products proposed using its cost-effective Structural Firelane soil beneath the surface, which would allow Sitescapes to install a sustainable landscape. The pervious green fire lane would then serve a dual purpose, providing a lawn for residents to enjoy while bringing the area up to code.

Storm Water Solution

ERTH Products Structural Firelane soil was paramount for the project because it is engineered to provide the structural integrity to support emergency vehicles while also having the biological and horticultural properties to create a sustainable landscape. HydRocks, the same material used in lightweight concrete, provides the structural strength in the soil mix, while the special blend of clay and ERTH Food provides the microbes and nutrients to create a living soil able to break down contaminants, cycle nutrients and feed the landscape.

With high compressive strength, HydRocks will not compress or crush under normal conditions, yet it is lightweight, making it easy to mix. The inert, inorganic granules enhance soils by absorbing and holding moisture, releasing stored water and nutrients to the root system as the surrounding soil dries. It contains voids for additional surface area for plant feeder roots and prevents soil compaction, providing superior drainage and air space for storm water runoff.

Even before HydRocks was specified, testing was necessary. Big River Industries, the company that manufactures the lightweight expanded clay aggregate product through a kiln-fired process, engaged engineering consultants to test soil blends, helping provide a product with the highest structural integrity for the project. The testing yielded information that substantiated the amended soil and its viability for the developer and local fire marshal.



The fire lane offers storm water and green space benefits.

The fire lane, measuring 150 ft long by 30 ft wide, used 225 cu yd of ERTH Products Structural Firelane soil, installed in a 6-in. layer beneath the sod. The traffic-bearing layer was applied above a 6-in. compacted aggregate base. Both the grass lawn and surrounding landscape beds benefit biologically from the engineered soil's components.

"The result is a fire lane that has horticultural and storm water benefits, while providing the structural integrity to support emergency vehicles at 30% to 40% less cost than competing products," said Scott King of ERTH Products.

By using the structural soil, the fire lane retains storm water on site and helps break down contaminants that would otherwise wash into the city water supply. It reduces the urban heat quotient significantly and provides a recreational area and landscape beds that improves the quality of life for the apartment development's residents.

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